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IN THIS ISSUE

Preventive Clinic Facilities in Ninety-four Counties

The Catalytic Potency of the Blood in Rheumatic Fever

Control of Silica Fumes in Quartz-Fusing Operations

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PREVENTIVE CLINIC FACILITIES AVAILABLE IN 94 SELECTED COUNTIES OF THE UNITED STATES [1, 2]

By Anthony J. Borowski [3] and Margaret Lovell Plumley [3]

The effectiveness of community programs organized in the interest of individual health is determined to a very large extent by the number of persons needing particular services who are brought to medical attention. It is recognized, of course, that medical examination or care necessary to complement mass educational effort or individualized instruction by health agencies may be obtained directly from practicing physicians, or that such services may be made available through organized public health clinics. Unfortunately, in the prevailing schemes where private practicing physicians are utilized for medical service, a relatively minor position is accorded preventive measures. Also, in nearly every community there is a large segment of the population, underprivileged from a financial standpoint, who cannot pay for medical service except by skimping on such basic necessities of life as food, shelter, and clothing. Acute medical and surgical emergencies, obviously, will have first claim on such meager funds as these people may spend for physician or hospital service. Therefore, the existence of organized clinics may be taken as a criterion for judging whether people receive material service or merely advice in matters of personal health.

In the past, various studies have been made of clinic facilities provided by out-patient departments of hospitals; investigations of clinics sponsored by school boards, health departments, and non-official agencies have also been conducted. Individual cities and counties have inquired into the total facilities existing within their boundaries. Seldom, however, has an attempt been made to give a composite picture of all clinics of a public health type serving as large a proportion of the population as it has been possible to cover in this

[1] From the Division of Public Health Methods, National Institute of Health. Study conducted in connection with the National Health Inventory.

[2] The term "preventive" as applied to clinics in this paper refers to those organized primarily for education or disease control, as contrasted with those in which the main purpose is medical care for low income and dependent groups of the population.

[3] Formerly Regional Superintendent of the U. S. Public Health Service National Health Inventory.

study. Such basic information should be most useful when expansion in public health organization is contemplated. Furthermore, persons concerned with public health administration should be interested to learn how communities differ with respect to opportunities afforded for clinic service and in regard to the auspices under which clinics of the several types operate.

The essential data on which this report is based were assembled in connection with the National Health Inventory. That part of the inventory known as the "Health Facilities Study" provided, among other information, a complete count of all clinics operated in the 94 counties surveyed. It is true that the counties studied are heavily weighted with those which are densely populated, and include most of the large cities. Their combined population is approximately 34,000,000, or about one-fourth of the total for the entire country. In these counties clinic service is apt to be developed well in excess of that which may be found in other areas throughout the United States, especially where the territory is predominantly rural. As a consequence, aggregate figures appearing in the tables are not well adapted for projection purposes; hence caution must be urged in estimating the facilities of the entire country on a composite of these 94 sample counties. However, some counties of most representative population categories are included in the study group, and the conditions found therein are believed to be illustrative of other areas having corresponding characteristics.

This discussion will center around those clinics primarily of a preventive or public health nature. The operating organizations are classed either as hospital out-patient departments or as health agencies. Those clinics definitely attached to hospitals are included in the former group, while all others are included in the latter category. This method of classification, arbitrary as it may be, divides the clinics according to their predominant interest—out-patient departments being chiefly concerned with care of the sick, and health agencies specializing in the preventive services most commonly associated with public health. Clinics of the latter type are usually operated by health departments, school authorities, visiting nurse associations, child welfare associations, and similar organizations. To simplify presentation, out-patient departments and health agencies maintaining the clinics selected for study because of their public health nature are further subdivided according to official or nonofficial designation, depending on whether they are sponsored by governmental or nongovernmental agencies.

Out-patient departments of hospitals in the counties studied sponsor 440 clinics of the types under discussion. Two-thirds of these departments are organized primarily to provide general service for the ambulatory sick, while the remainder furnish various types of special

services. Only a fifth of these departments are connected with hospitals under governmental control; practically all of the others are sponsored by hospitals designated as nonprofit institutions. Public health clinics of fixed location are also operated by 169 health departments, 139 school boards, 22 other official agencies, and by 240 nongovernmental health agencies. The latter group consists of visiting nurse associations, welfare organizations, and other agencies with special health interests. In addition, 4 health agencies, 3 official and 1 nonofficial, provide clinic service by means of traveling units only. It may be added that 60 agencies already listed as having stationary clinics also provide supplementary service through traveling units.

Before discussing the figures presented in the accompanying tables, it may be well to point out that the basic data for health agencies differ somewhat from those pertaining to out-patient departments. For example, clinic service to school children is reported by health agencies only, whereas general dispensaries may do similar work under some other designation. Information concerning provisions for immunization and for infant and preschool hygiene could not be elicited from out-patient departments because such activities are usually handled in child health and pediatric clinics where they are most frequently recorded as part of the general service. Venereal disease entries listed in the tables under out-patient departments refer to the work of clinics separately organized for gonorrhea or syphilis, and those designated as genito-urinary and gynecology units. Although services for gonorrhea were not segregated from other work done in the genito-urinary and gynecology clinics, such units are assumed to treat this condition in the absence of separate facilities. Venereal diseases may also be treated in dermatology and general medicine clinics and be included with other work, but an accurate count of the number of departments which organize their service in this way was not obtainable. The figure recorded for tonsil and adenoid clinics maintained by out-patient departments is an overall statement since it represents the number of ear-nose-throat clinics. Because of the foregoing circumstances and others that might be enumerated, it seemed more expedient to base this report upon the existence of facilities than to attempt to express volume of service by different categories and in relation to the population.

At the outset, 19 of the 94 counties may be dismissed as having no clinic service, but among these only 2 represent areas containing populations in excess of 100,000. There are 4 counties, each with less than 100,000 population, in which the only clinic service available is provided by out-patient departments. In 21 counties of the same popuation group no out-patient department exists, but preventive clinic service is furnished by other types of agencies. The remaining 50 percent of the counties studied reported clinics operated both by out-patient departments and by other agencies.

Upon reviewing the data, it becomes apparent that clinic service is available with relative infrequency in counties of small population. As a matter of fact, no clinic service of any type was reported in 6 of the 15 counties with less than 20,000 inhabitants. In the next population group, 20,000–99,999, nearly three-fourths of the counties provide some form of clinic service. When jurisdictions exceed 100,000 in population, it is unusual to find a county without at least one clinic which offers some variety of preventive health service. In the smaller counties, clinics of the type being studied are much more apt to be maintained by health agencies than by out-patient departments of hospitals. Again it should be emphasized that out-patient departments are primarily a large-city development; nearly four-fifths of the total number covered are located in the 14 largest counties, and over half in the 5 largest cities of the country, all of which were included in this study.

To furnish a basis for more complete understanding of the clinic situation, an enumeration has been made (table 1) of the clinics by type of service, showing which types are provided by counties of various population classifications. From the standpoint of frequency, preschool hygiene clinics are maintained in the largest number of counties, while clinic service designated especially for tuberculosis, immunization, dentistry, and infant, maternal, and school hygiene follow in the order named. Relatively few counties reported heart and cancer clinics.

TABLE 1.—*Number of surveyed counties in different population groups which reported provision of selected types of clinic service*

Type of clinic service	Counties of each size group which provided specified type of service					
	All counties (94) [1]	Under 20,000 (15)	20,000–99,999 (39)	100,000–249,999 (13)	250,000–499,999 (13)	500,000 and over (14)
Any type	75	9	28	11	13	14
Cancer	34	1	3	9	7	14
Dentistry	58	3	18	11	12	14
Eye	49	3	9	10	13	14
General, unorganized	1	----------	1	----------	----------	----------
Heart	30	1	1	3	11	14
Immunization	60	5	19	11	11	14
Infant hygiene	57	6	17	10	10	14
Maternal hygiene	56	3	17	10	12	14
Orthopedics	50	3	9	11	13	14
Preschool hygiene	65	9	20	11	11	14
Psychiatry	40	2	8	7	9	14
School hygiene	56	5	17	10	10	14
Tonsils and adenoids	46	2	7	10	13	14
Tuberculosis	64	3	23	11	13	14
Venereal disease	50	2	12	10	12	14

[1] Figures in parentheses indicate the total number of counties surveyed in each population group.

In the areas with less than 20,000 population, where as a rule clinic facilities are uncommon, preschool hygiene services can be obtained more frequently than any other type of service. The presence of infant hygiene, immunization, and school hygiene clinics was reported by the next largest number of counties of this size. Only one county of this population group reported heart or cancer service. Except for a single traveling unit which furnishes service to infants and preschool children, all clinics are of fixed location. Health departments, school boards, and a single small out-patient department organized for general service maintain the clinics reported by counties in this population group.

The most outstanding difference between counties of the lowest population group and those having between 20,000 and 100,000 inhabitants is found in the predominance of tuberculosis clinics in the second group. At the same time, clinic facilities for preschool hygiene, immunization, and dentistry, and for maternal, infant, and school hygiene are outstanding in the larger as well as in the smaller areas. In both instances health agencies far surpass out-patient departments with respect to these activities. Heart and cancer clinics are seldom provided in either group of counties.

The statistics shown here provide supporting evidence to the statements made previously, that clinic services are not promoted to any great extent except in certain counties with large populations. Although facilities may differ with respect to their development, each of the listed clinic services was reported by at least one agency in every one of the 14 counties with populations in excess of 500,000. Provisions for more than a fourth of these services, namely, eye, orthopedics, tonsils and adenoids, and tuberculosis, were similarly reported for all counties in the group having populations between 250,000 and 500,000. In only one county of this size category is there no clinic service for venereal disease; in another, no dental care is supplied. A third service furnished by all but one county of this size is maternal hygiene. Clinic facilities for cancer are available least frequently.

Generally speaking, provision of clinics in counties with populations greater than 100,000 but smaller than 250,000 follow a pattern closely resembling that of the more populous areas. However, it is of interest to observe that few counties provide heart clinics until the population exceeds the 250,000 mark. On the other hand, sponsorship of cancer clinics, also seldom found in counties of the two lowest population groups, was reported by a relatively large number of counties having more than 100,000 inhabitants.

TABLE 2.—*Number of out-patient departments and health agencies operating under specified control which rendered selected types of clinic service*

Type of clinic service	Out-patient departments		Health agencies	
	Official	Nonofficial	Official	Nonofficial
Any type	89	351	333	241
Cancer	19	59	5	12
Dentistry	46	184	146	102
Eye	44	213	70	46
General, unorganized			7	6
Heart	33	147	26	22
Immunization			218	49
Infant hygiene			107	108
Maternal hygiene	44	218	50	56
Orthopedics	45	207	40	25
Preschool hygiene			154	100
Psychiatry	24	84	36	28
School hygiene			257	33
Tonsils and adenoids	51	251	39	49
Tuberculosis	41	76	107	44
Venereal disease	49	228	61	28

Over a thousand out-patient departments and health agencies reported one or more clinic services. Table 2 presents, by control and by type of service, the number of agencies involved. In all, 89 out-patient departments operate under official control and 351 under nonofficial auspices. Of the health agencies, 333 are official and 241 nonofficial. All immunization and infant, preschool, and school hygiene services discussed were reported by health agencies alone, although, as previously indicated, an undetermined amount of each of these services is probably rendered through pediatric clinics which fail to differentiate this work from general clinic service. Significant is the fact that official health agencies provide the larger number of three of these services, immunization, and preschool and school hygiene; infant hygiene clinics, however, are almost equally divided between official and nonofficial sponsors. The dental and tuberculosis clinics operated by health agencies are also predominantly, but by no means exclusively, under official control. There is little difference in the number of heart clinics sponsored by official and nonofficial organizations, while cancer clinics were reported by but 5 of the governmental and only 12 of the nongovernmental health agencies.

Of the types of clinic services under consideration, those most commonly available in out-patient departments are eye, maternal hygiene, orthopedics, ear-nose-throat (designated tonsils and adenoids), and venereal disease. Not only do nonofficial out-patient departments outnumber departments under official control in the maintenance of these services, but they also exceed official and nonofficial health agencies combined. Even for all remaining types of clinic service, facilities are more often furnished by out-patient departments attached to nongovernmental hospitals than by those operating

under the auspices of governmentally-owned institutions. Both heart and cancer clinics, uncommon for health agencies, are considerably more numerous in out-patient departments.

Analysis of the situation in counties of different population sizes indicates that in those with less than 100,000 persons there are comparatively few out-patient departments, and that clinic service through health agencies likewise is limited Table 3 shows the influence of a county's population status upon the maintenance of preventive clinics, both by out-patient departments and by health agencies. Actually, this table represents a more detailed analysis of the figures presented in table 2.

TABLE 3.—*Number of out-patient departments and health agencies located in counties of different population groups and operating under specified control, which rendered selected types of clinic service*

Type of clinic service	Counties with less than 100,000 population				Counties with 100,000-499,999 population				Counties with 500,000 population and over			
	Out-patient departments		Health agencies		Out-patient departments		Health agencies		Out-patient departments		Health agencies	
	Official	Non-official	Official	Non-official	Official	Non-official	Official	Non-official	Official	Non-official	Official	Non-official
Any type	8	7	46	14	32	50	100	64	49	294	187	163
Cancer	------	1	1	1	6	6	2	2	13	52	2	9
Dentistry	2	2	18	4	12	19	59	23	32	163	69	75
Eye	------	2	10	2	12	26	24	8	32	185	36	36
General, unorganized	------	------	1	------	------	------	------	------	------	------	6	6
Heart	1	------	1	2	7	18	8	3	25	129	17	17
Immunization	------	------	31	8	------	------	75	11	------	------	112	30
Infant hygiene	------	------	22	10	------	------	29	50	------	------	56	48
Maternal hygiene	------	3	18	3	14	27	13	19	30	188	19	34
Orthopedics	2	5	7	2	16	32	11	9	27	170	22	14
Preschool hygiene	------	------	43	12	------	------	52	32	------	------	59	56
Psychiatry	1	2	5	1	6	8	11	6	17	74	20	21
School hygiene	------	------	32	3	------	------	72	7	------	------	153	23
Tonsils and adenoids	1	3	5	1	13	32	20	5	37	216	14	43
Tuberculosis	7	4	24	8	14	5	40	13	20	67	43	23
Venereal disease	1	5	14	2	14	28	19	3	34	195	28	23

Only 15 of the 440 out-patient departments were reported from counties having less than 100,000 inhabitants. Of these, 8 are under official control. Eight of the 15 provide tuberculosis service only, and 1, attached to an orthopedic hospital, gives nothing but orthopedic service. Similarly, of the 574 health agencies, only 60 reported clinic service of any sort in the areas with smallest population. Approximately three-fourths of these are under official control. Thus it is evident that, of the existing clinic service under consideration in counties with less than 100,000 population, the greater proportion is provided under official auspices. The types of service available are, for the most part, immunization; infant, maternal, preschool, and school hygiene; and tuberculosis diagnosis.

The number of agencies, as well as the variety of clinic service, is very much greater in the counties with populations ranging from 100,000 to 499,999 than is the case for the smaller counties. However, the most significant difference is noticeable in counties with a population in excess of 500,000. As a matter of fact, nearly four-fifths of the out-patient departments and three-fifths of the health agencies are located in the latter group of counties. Eighty-six percent of the out-patient departments and 47 percent of the health agencies in the most densely inhabited areas are under nonofficial control. This situation is in marked contrast to that existing in counties with less than 100,000 population.

To a certain extent, the differences found are only to be expected, for the greater number of inhabitants in the populous counties naturally requires more numerous clinic facilities than are needed in areas which are essentially rural. Indeed, the group of counties served by nearly three-fourths of the clinics listed also contains three-fourths of the population involved, thus indicating that urban areas have in no way been oversupplied. At the same time, the limited accommodations available in smaller counties naturally restrict the variety of services which can be provided, and the demand for multiple types of service prevails even in rural areas. Finally, it may be added that 19 of the counties studied have no clinic service of the type being considered.

CONCLUSION

Lack of clinic service to support the educational work of public health agencies is an outstanding deficiency of health organization, especially for counties in the lower population groups. Furthermore, when service is reported in sparsely populated counties, it is usually of the type most frequently sponsored by official health agencies, i. e., immunization; infant, maternal, preschool, and school hygiene; and tuberculosis. Nonofficial health agencies and hospital out-patient departments are almost nonexistent in the smaller counties, and so are such services as cancer, heart, psychiatry, eye, venereal disease, and orthopedics.

Among counties constituting large population units, however, the concentration of out-patient departments as well as of nonofficial agencies with various health interests brings about a situation whereby every type of clinic listed for this study is sponsored by at least one organization. In other words, the availability of clinic service appears to be entirely dependent upon size of population. Especially in the counties which are predominantly rural, health programs are seriously handicapped by the absence of those clinic services which are so necessary in complementing the instructive activities of public health organizations.

THE CATALYTIC POTENCY OF THE BLOOD IN RHEUMATIC FEVER

By Mark P. Schultz, *Surgeon*, and Edythe J. Rose, *Associate Bacteriologist, United States Public Health Service*

The catalytic power of the blood was found to be consistently elevated only in patients with rheumatic heart disease or active rheumatic fever by Healy and Baker (*1*), who investigated many individuals, suffering from various febrile and afebrile diseases, with respect to this property. The catalytic power of the blood is reported to vary directly with the degree of vitamin "C" saturation (*2*, *3*, *4*); it is especially low in scurvy (*5*), and the observation of a distinct rise following the intravenous injection of ascorbic acid has been proposed as a test for subclinical scurvy (*6*). In view of the suggested relationship between rheumatic fever and scurvy (*7*), which has been the subject of several studies (*8*, *9*, *10*, *11*, *12*), further investigation of the catalytic properties of the blood in patients with rheumatic fever seemed indicated.

Furthermore, such an investigation would be of interest in connection with problems of glucose metabolism. Rheumatic heart disease is said to be extremely rare among diabetics (*13*), and rheumatic activity, although present before, is rarely observed to continue after the development of this defect in carbohydrate metabolism (*14*). Although we could demonstrate no metabolic abnormality of related character as peculiar to patients with rheumatic fever by means of the glucose tolerance test [1] (*15*), infection in guinea pigs treated with insulin induced the development of nonpurulent carditis slightly resembling that of rheumatic fever (*16*). Since, in normal individuals, a rise in the blood sugar is associated with a drop in the catalytic potency of the blood (*17*), it is of interest to determine whether a similar response is demonstrable in patients with rheumatic fever.

Finally, in view of the suggested relationship between rheumatic fever and hemolytic streptococcal infection (*18*), it may be pertinent in this connection that, of many aerobic pyogenic species investigated, only hemolytic streptococci have been found to possess no catalytic potency (*19*); they are also rather sensitive to the action of hydrogen peroxide (*20*). However, no correlation has been demonstrable between the occurrence of acute pharyngitis and the catalytic activity of the pharyngeal mucous membranes (*21*). The purpose of the experiments reported here is, therefore, to study the catalytic power of the blood in rheumatic fever before and after the administration of glucose.

[1] Steincrohn (J. Am. Med. Assoc., 111:1837 (1938)) has recorded additional references to the literature which suggest that a degree of hypoglycemia is characteristic of active rheumatic fever and presented evidence of an increased glucose tolerance in 9 of 11 patients observed.

Catalase is one of the most widely distributed enzymes in plants and animals and probably is essential to intracellular oxidative processes. Hydrogen peroxide is the specific substrate. The catalytic activity of blood is present almost exclusively in the erythrocytes, and for this reason relative concentrations in this fluid are usually expressed as per million red blood cells or otherwise adjusted for the associated degree of anemia or polycythemia. (For a recent review of the properties of this enzyme see von Euler (*40*)).

The catalytic activity of the blood has been investigated in various types of disease (*1, 5, 22, 23, 25, 26, 46*), but the results are frequently conflicting or lack confirmation. There seems to be general agreement, however, that this property is enhanced in anemia (especially primary anemia) and hyperthyroidism, and that it is depressed in various cachectic states incident to such conditions as carcinoma, severe diabetes, starvation, and chronic febrile disease. Evidence has also been presented that it is low in various vitamin deficiencies (*5, 23, 29, 32*).

However, numerous physiologic and extrinsic factors including the time of day, age, sex, capillary bed from which specimens are obtained, degree of recent exposure to ultra violet rays, environmental temperature, length of time since the last meal, amount of protein in the diet, presence of cardiac decompensation, and administration of various drugs have been found to influence the level of catalytic activity of the blood (*5, 17, 24, 27, 31, 33, 34, 35, 36, 37, 38, 39, 41*).

METHODS

Catalase.—The relative catalytic potency of blood specimens is determined by observing their effect upon hydrogen peroxide—either the rate of dissociation of this compound or the quantity dissociated in a definite period of time. The extent of the reaction is made evident either by titration of the amount of hydrogen peroxide remaining undestroyed (*2, 22, 23, 28*) or by measurement of the volume of oxygen evolved (*1, 25, 42*). We have employed a volumetric method similar to that described by Koeppe, but differing in the following essential particulars:

1. The reaction was buffered. The buffer added was effective in maintaining the pH at 7.4 during the period of observation. This has been found to be the optimum level for a reaction time of the length of that employed (*43*). In preliminary experiments more regular results were obtained after the buffer was introduced.

2. Instead of considering the quantity of oxygen evolved during an arbitrarily selected length of time, the amount collected during successive periods was observed. It was found that the reaction reached a maximum rate after different intervals of time when observations were repeated upon the same specimen. Most uniform results

were obtained when the quantities of oxygen collected only during comparable periods of maximum evolution were considered.

3. The temperature of the reaction was controlled between 18° and 20° C. Wide variations were encountered in our experience when the extremes of room temperature were permitted to affect the reaction.

4. Blood specimens were preserved at a low temperature in glycerine, permitting repeated determinations on the same specimen. Although not employed in clinical methods hitherto described, this was found to contribute greatly to the uniformity of results. The reaction is apparently affected by factors not altogether controllable, among them scarcely perceptible vibration. Only by making repeated determinations can the effect of such influences be identified and the margin of experimental error reduced. Descriptions of previous methods indicate that an experimental error of from 10 to 20 percent was probably unavoidable. Performing a maximum of four determinations per specimen, we have been able to keep the margin of error within ±4 percent. Specimens preserved in the manner described were found not to vary in catalytic potency for at least 72 hours. In subsequent experiments all of the observations on each specimen were completed within 24 hours.

Briefly, the procedure was as follows: Capillary blood was collected in glycerine and immediately placed in contact with carbon dioxide ice, where it remained except when portions were being withdrawn for analysis. A measured quantity of the glycerine-blood mixture was placed in a reaction flask at 18°–20° C. with buffered hydrogen peroxide and the oxygen evolved was collected over water in an inverted burette. The amount of oxygen evolved in each of six consecutive 5-minute periods was observed and the total quantity produced in the three 5-minute periods of maximum flow was considered an indication of the catalytic potency of the specimen examined. This volume was reduced in each case to standard conditions by correction for temperature and barometric pressure. The average of two determinations was accepted if neither varied more than 2 percent from it. This "catalase number" was corrected with reference to the number of red blood cells to express the "catalase index," the relative catalytic power of each specimen for an erythrocyte count of 5 million. (See Appendix for details.)

Blood glucose.—Capillary blood glucose was determined by the method of Miller and Van Slyke (*44*). The blood was laked with acid cadmium sulfate solution, and sodium hydroxide was added at the bedside. The specimens were then kept in a portable refrigerator and the procedures completed in the laboratory within 6 hours. According to the originators of this method, samples remain stable under such conditions.

Erythrocyte enumeration.—Two diluting pipettes were filled at the bedside and at least 1,000 cells were counted in the fluid from each pipette. If the two counts varied less than 200, their average was accepted.

Erythrocyte sedimentation rate.—Five cc. of venous blood were withdrawn and delivered into bottles each containing 10 mg. of dry potassium oxalate which had been recrystallized and adjusted in pH as recommended by Peters and Van Slyke (*45*). The erythrocyte sedimentation rate was determined at room temperature by observing after one hour the fall, in millimeters, of the erythrocyte level in a 20-cm. column of blood sustained in a vertical tube of 3-mm. internal diameter.

Material.—Patients with active rheumatic fever and other febrile diseases were examined. Following preliminary experiments, to be described, particular precautions were observed in the selection of material. Two (rarely three) patients of the same age and sex and of approximately equal weight, one with rheumatic fever and one with some other febrile disease, were examined each day. Only those were selected who had been in the same institution, subject to the same environment, and had received the same diet for equivalent lengths of time. Insofar as possible, only those were chosen in whom the duration of illness, height and duration of fever, and erythrocyte sedimentation rate were approximately the same. No drugs were taken by either patient for at least 24 hours before examination. The patients were weighed and placed in adjoining beds the preceding evening; and at about 7 a. m., while fasting, the first specimens of blood for the determination of catalytic activity and glucose content were taken. Red blood-cell pipettes were filled at this time. Each patient then received 1 gram of glucose per kilogram of body weight by mouth and 1 hour later capillary blood specimens were again taken. At this time venous blood was also withdrawn for erythrocyte sedimentation rate determination.

RESULTS

At the outset, fasting blood specimens from 23 patients with various febrile diseases, and 19 with rheumatic fever were examined for catalytic activity. The catalase index in different individuals varied between 2.01 and 9.20. Results in the control group differed from those in the rheumatic only in that there was a greater range of variation in the former. Since no characteristic findings were demonstrable in rheumatic fever in this manner, a series of selected patients was examined.

An attempt was made to minimize the influence of the many physiological variables not peculiar to the type of disease present. To this end 12 groups of patients, each comprising one with rheumatic fever and

one or two with some other febrile disease, were studied. As stated in the section on "Methods," the patients in each group were matched as closely as possible with respect to age, sex, character of diet received, and other controllable factors which might affect the degree of catalytic activity of the blood.

The results of this investigation are shown in table 1. Although in the earlier series of unselected patients a maximum variation in the catalytic activity of fasting specimens of almost fivefold was present, variations within the groups of this second series exceeded twofold in only one instance (group 9). In most groups the fasting level was slightly lower in the rheumatic-fever patient than the control; but the differences were usually slight, and in four instances the converse was observed (groups 2, 3, 11, and 12). Again, no characteristic alteration in the catalytic activity of fasting blood specimens was demonstrable in rheumatic fever.

TABLE 1.—*Catalytic activity and glucose content of capillary blood*

Group No.	Case No.	Diagnosis	Age	Sex	Temperature F.°	E. S. R.[1]	Blood catalase index		Blood glucose	
							Specimen No. 1[2]	Specimen No. 2[3]	Specimen No. 1[2]	Specimen No. 2[3]
1	10	Rheumatic fever	11	F	100.8	60	7.70	6.24	95	106
	9	Pharyngitis	10	F	100.4	80	8.61	8.03	97	96
2	16	Rheumatic fever	11	F	101.2	63	8.09	7.68	100	173
	15	Cervical adenitis	9	M	99.7	121	6.83	6.32	102	142
3	7	Rheumatic fever	9	M	100.1	121	5.43	5.43	97	128
	8	Osteomyelitis	9	M	100.0	136	5.07	6.27	94	118
4	11	Rheumatic fever	12	M	100.0	118	5.65	5.46	93	174
	12	Cervical adenitis	12	M	100.6	110	9.27	9.08	106	183
5	23	Rheumatic fever	11	M	99.0	60	4.16	4.04	122	153
	22	Upper respiratory infection	9	M	99.2	65	4.76	4.67	105	146
6	13	Rheumatic fever	14	M	99.6	104	3.76	3.70	107	156
	17	Pharyngitis	14	F	99.0	93	5.09	5.08	96	128
7	18	Rheumatic fever	12	M	99.8	117	4.07	3.83	102	163
	24	Pneumonia	11	M	99.6	96	5.42	5.37	87	132
8	20	Rheumatic fever	13	M	101.0	------	3.55	3.25	101	212
	21	Pharyngitis	14	F	101.0	91	4.81	4.54	90	150
9	4	Rheumatic fever	9	M	101.0	100	3.96	------	------	------
	5	Sepsis	10	M	102.0	115	9.17	------	------	------
10	3	Rheumatic fever	11	F	100.5	95	3.34	------	------	------
	6	Upper respiratory infection	11	F	100.0	90	5.35	------	------	------
11	62	Rheumatic fever	20	F	98.6	85	2.84	------	86	------
	61	Rheumatoid arthritis	20	F	98.6	66	2.77	------	97	------
12	74	Rheumatic fever	16	F	103.0	130	3.38	------	129	------
	34	Pneumonia	13	F	103.2	121	3.82	------	92	------
	35	Tuberculous peritonitis	14	F	103.0	92	2.16	------	112	------

[1] Erythrocyte sedimentation rate in millimeters per hour.
[2] Fasting specimen.
[3] Specimen 1 hour after 1 gram glucose/kilogram body weight by mouth.

In 16 instances (groups 1 to 8, inclusive, table 1) fasting specimens were compared with those taken 1 hour after the administration by mouth of 1 gram of glucose per kilogram of body weight. The glucose content of the blood increased in all but one case (No. 9) following ingestion of the sugar. In 14 cases the catalytic power of the blood coincidently decreased; in 1 it remained unchanged while in only 1

was an increase observed. These changes were frequently very slight but it was apparent that, regardless of the type of disease present, a decrease in catalytic activity was associated with the increase in glucose content of the blood following the ingestion of this sugar. No further correlations were demonstrable.

DISCUSSION

The catalytic activity of blood drawn during the post-absorptive state from patients with rheumatic fever was compared with that from patients with various febrile diseases under controlled conditions in 13 instances. In 9, or over three-fourths of these observations, the catalytic potency was lower in the rheumatic-fever patient than in the control. The differences, however, were very slight in several instances and are probably without significance. In view of the uniformly low levels of catalytic power of the blood reported in scurvy, these findings afford no evidence that this deficiency disease is characteristically associated with rheumatic fever.

Our results do not confirm those of Healy and Baker (*1*), which indicated that an increased catalytic power of the blood is characteristic of rheumatic fever. This divergence may be due to the fact that a highly simplified method was employed by the authors quoted. The patients were not observed in the post-absorptive state, the erythrocyte count was not taken into consideration in making comparisons of catalytic potency, the reaction was not buffered and not observed during successive intervals, duplicate determinations were not made, and all specimens were preserved in the refrigerator for 24 hours before titration. The latter circumstance is probably of especial significance, for the catalytic property of blood has been observed to be very labile (*23, 28, 30, 40, 42*); the precaution is usually taken to utilize specimens immediately after they are obtained.

Koeppe (*17*) observed in normal individuals a fall in the catalytic activity of the blood coincident with a rise in blood glucose after the ingestion of carbohydrate. Our results indicate that a similar phenomenon is demonstrable in patients with various febrile diseases including rheumatic fever. No characteristic anomaly of metabolism in the latter disease, however, is revealed by these observations.

SUMMARY AND CONCLUSIONS

1. A method for determination of the catalytic power of the blood which permits duplicate observations on the same specimen has been described.

2. The catalytic power of the blood was determined in 67 patients with various febrile diseases, including rheumatic fever, during the post-absorptive period. Although the level of catalytic activity was

slightly decreased more frequently in the rheumatic-fever group than in the control, this was not a characteristic finding.

3. The catalytic power of the blood and the blood glucose concentration was determined in 16 patients with various febrile diseases, including rheumatic fever, before and after the oral administration of glucose. Almost uniformly a fall in catalase activity was observed coincident with a rise in the blood-glucose level. Patients with rheumatic fever reacted similarly to those with various other febrile diseases.

4. These results do not support the reported conclusion that a high level of catalytic potency is characteristic of the blood in rheumatic fever. They are, however, in accord with the reported observation that the catalytic activity of the blood falls coincident with a rise in blood glucose following the ingestion of carbohydrates.

5. These conclusions afford no evidence that scurvy or other metabolic anomaly is characteristically associated with rheumatic fever.

Appendix

DETAILS OF THE BLOOD CATALASE METHOD

REAGENTS

Glycerine.—A single lot of Baker and Abramson reagent-grade glycerine was used. Weekly, fresh bottles for blood collection were prepared by measuring into each 7.9 cc. of glycerine with a calibrated syringe, after which they were kept in contact with carbon dioxide ice.

Hydrogen peroxide.—A single lot of du Pont 30 percent "Perone" apportioned into several 1-liter glass-stoppered bottles, preserved in darkness at 0° C., was used throughout. Each day a dilute 1.875 percent solution was made from this stock in an opaque bottle and kept constantly in contact with ice.

Buffer.—Buffer was prepared by dividing 15.69 gm. of KH_2PO_4 and 68.86 gm. of anhydrous Na_2HPO_4 in 9 liters of water. A sufficient quantity was removed from this stock for use each day and the pH (7.4) was verified weekly.

Water.—Freshly boiled and cooled, double-distilled water was used exclusively.

Apparatus.—Pyrex glassware only was used and those utensils coming in contact with dilute hydrogen peroxide, kept filled with the dilute solution when not in use, were rinsed with a freshly prepared solution each morning. Single pipettes and other utensils were used exclusively for each procedure and were never exposed to direct light. The inverted burette was provided with a water jacket. The water filling the burette was retained in a closed system by connecting the lower end with a rubber bag, partially distended with water, which was immersed in the reservoir.

Procedure.—At the bedside 0.1 cc. of capillary blood drawn from a finger was mixed with 7.9 cc. of glycerine at 37–40° C., and the specimen was immediately placed in contact with dry ice. It was again temporarily warmed to the same temperature when 1-cc. portions were being removed for analysis. The exact quantity was withdrawn by exerting suction with a glass syringe through a capillary tube upon a 1-cc. pipette clamped in a vertical position and provided with a stopcock at the upper end. The 1 cc. of glycerine-blood mixture was then combined with 11.5 cc. of water at room temperature by several exchanges between the container and the pipette. Ten cc. of this dilute blood-glycerine-water mixture were then placed in an opaque reaction flask to which had already been added

40 cc. of dilute hydrogen peroxide and 75 cc. of buffer. The contents of this 150-cc. reaction flask were mixed by swirling, a stopwatch was started, the flask was clamped in position in the water bath (18–20° C.) and connected with the inverted burette. The reaction was observed for 37 minutes and the quantities of oxygen collected during six 5-minute periods noted. One minute was required in the beginning to connect the apparatus and 1 minute for measuring the volume in the burette between each 5-minute period.

With the method as described, the following conditions obtain in the reaction flask of 150-cc. capacity:

Total volume	125. 0 cc.
pH	7. 4.
Concentration of hydrogen peroxide by weight ... percent	0. 6 (0. 75 gm.).
Quantity of blood	0. 01 cc.
Concentration of glycerine ... percent	0. 8.
Temperature	18–20° C.
Concentration of buffer	M/25.

Two specimens of blood were obtained from each patient—No. 1 when fasting and No. 2 an hour after glucose had been taken by mouth. The following is an example of the calculation of the findings for one patient. The method of obtaining uncorrected catalase indices (specimens 1 and 2) is indicated in table 2. The two determinations on the fasting specimen (No. 1) were made consecutively and the temperature of the water jacket averaged 24.5° C. For specimen No. 2 similar conditions prevailed, with an average temperature of 25.2° C. The corrected barometric pressure was 762 mm. The observed volumes, reduced to standard conditions of pressure and temperature, are indicated in the last line of table 2 and are referred to as "corrected catalase numbers."

TABLE 2.—*Examples of the determination of two "catalase numbers" for 1 patient*

Successive 5-minute periods	Cubic centimeters of oxygen evolved: Fasting specimen, No. 1: First determination		Fasting specimen, No. 1: Second determination		Specimen after 1 hour, No. 2: First determination		Specimen after 1 hour, No. 2: Second determination	
1	3.2		2.2		2.0		1.8	
2	5.4		4.8		4.6		4.0	
3	6.8	Av., 6.60 (1)	6.2	Av., 6.47 (2)	6.0	Av., 6.20 (3)	5.5	Av., 6.30 (4)
4	6.5		7.0		6.8		7.1	
5	6.5		6.2		5.8		6.4	
6	5.2		5.2		4.5		4.8	

CATALASE NUMBERS

	Fasting specimen	Specimen after 1 hour
Uncorrected	Average of (1) and (2) ... 6.53	Average of (3) and (4) ... 6.26
Corrected [1]	5.85	5.59

[1] E. g., reduction to standard conditions of temperature and barometric pressure.

Insofar as the catalytic property of the blood is confined to the erythrocytes, for the purpose of comparison between patients, the results must be adjusted according to the number of erythrocytes. The "catalase index" is, therefore, calculated to express the relative catalytic power of the specimen had the red blood cells numbered 5 million. In this instance, the red blood-cell count was 4.82 millions. The catalase indices for the two specimens are, therefore, as follows: Fasting, 6.07; after glucose, 5.80.

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A STUDY OF QUARTZ-FUSING OPERATIONS WITH SPECIAL REFERENCE TO THE MEASUREMENT AND CONTROL OF SILICA FUMES[1]

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Fused quartz apparatus is being used increasingly both in industry and in the laboratory. Its properties, chief among which may be mentioned its ability to transmit ultraviolet light, and its low coefficient of expansion, make it suitable for numerous processes. Fused quartz is blown at temperatures ranging from 2,500° to 3,000° F. Above 3,200° F., quartz volatilizes so rapidly that it is difficult to work. Fused quartz operations require greater skill than glass blowing and have certain undesirable aspects. Operators usually work for a limited time, ranging from two to four hours per day. They complain of a disagreeable odor (said to be caused by quartz fumes), high temperatures, and radiant energy (ultraviolet and infra red), which contribute to fatigue and sometimes cause nausea. Supersonic vibrations produced in the oxy-hydrogen jet have been thought to increase these symptoms. The occurrence of silicosis among quartz

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[1] From the Division of Industrial Hygiene, National Institute of Health.

workers with continued exposure is possible, although only limited published data are available. Abraham (*1*), in a study of silicosis among makers of fused quartz tubing and rods, states that among nine exposed men, eight were found to have evidence of silicosis. It is possible that the short daily exposure of quartz-fusers in this country is responsible for the fact that no silicosis has as yet been reported among them.

The study here reported has several objectives. These are: (1) The determination of the concentration of quartz fumes produced during fusing, (2) measurements of the intensity and range of sound frequencies produced by flame jets, (3) design of a suitable method of controlling silica fumes generated, and (4) an estimation of the amount of heat produced by oxy-hydrogen flame through its combustion product, steam.

SAMPLING AND ANALYSES OF QUARTZ FUMES

After numerous preliminary tests, two series-connected Public Health Service type impingers operated at 1 cubic foot per minute (*2*) were found most satisfactory for the collection of air-borne colloidal silica. From one to four times as much silica was collected in the second impinger as in the first. When three series-connected impingers were used, only small amounts were collected in the third. All impinger samples were taken at the breathing level of the worker.

A modification of the King and Dolan (*3*) method for determining silica in urine was used in measuring (quantitating) the silica in the samples collected. This method is sensitive and simple to use, but is subject to certain limitations. Phosphates and certain other radicals will produce color which interferes with the silica determination. The possibility of these substances being in the air was eliminated by taking a sample immediately before starting to fuse the quartz. In no case did this control sample develop color when tested.

The silica fume obtained from quartz fusing is insoluble in distilled water and in acid solutions. Since the blue color develops only in acid solutions (pH about 3), it is not possible to test the water suspension directly for silica. However, when the samples were treated with 10 percent Na_2CO_3 and allowed to stand several hours, or better overnight, in wax bottles, the colloidal silica was completely dissolved. The solutions were then brought back to a pH of about 4 with H_2SO_4 and tested for silica with the molybdate and aminonaphtholsulfonic acid solutions. When silica was present, a deep blue color developed which was compared in a colorimeter with the color produced by a known amount of standard potassium silicate (K_2SiO_3) solution. No trouble was experienced in matching colors or checking results. The sodium carbonate (Na_2CO_3) solution and the samples, while alkaline,

were kept in wax bottles. This procedure gave uniformly low blanks for the distilled water and reagents, even when measured by the sensitive colorimetric method.

The concentrations of silica fume which were collected and measured by this technique were well above the least detectable limit and it was possible to study the reduction obtained from exhaust ventilation by taking somewhat longer samples under controlled conditions.

The silica-fume concentrations determined as described above are shown in table 1. The particles are very fine and readily visible in a Tyndall beam. Samples collected with an Owens jet apparatus show a chalk-like streak, although distinct particles cannot be seen even with a 4 mm objective and 10X eyepiece (*4*). During all quartz-fusing tests, there was a characteristic metallic-fume odor. The nasal passages also felt contracted, but this was probably due to the Hill effect caused by the presence of an intense infra red source (*5*). Both effects are uncomfortable, but not distressing.

TABLE 1.—*Results of silica determinations using impinger technique* [1]

Sample number	Volume of air samples (cu. ft.)	Total silica (mg)	Concentration (micrograms per cubic foot)	Remarks
1	23.0	0.037	1.6	Impinger. Before fusing.
2	25.9	3.38	131	Impinger. Fusing.
3	9.6	3.28	341	Impinger. Fusing.
4	10.0	1.16	116	Impinger. Fusing.
5	30.0	0.068	2.3	Impinger. Before fusing.

[1] Total silica in distilled water and reagents as follows: 0.0001 mg/cc, 0.0014 mg for $Na_2CO_3+H_2SO_4$ per sample analyzed.

Whether the concentrations given in table 1 are capable of producing silicosis with continued exposure can not be stated, since in this study only one worker was engaged in fusing quartz, and his exposure was limited to a matter of a few months.

In table 2 is given the loss in weight experienced by fused quartz when heated to temperatures ranging from 2,500° to 3,000° F. It will be noted that the losses are large, indicating that the vapor pressure of heated quartz is quite high. The average loss is approximately 30 grams per hour.

TABLE 2.—*Loss in weight of heated fused quartz* [1]

Time of heating (minutes)	Weight lost (grams)	Rate of loss (grams/hr.)	Time of heating (minutes)	Weight lost (grams)	Rate of loss (grams/hr.)
13.8	7.4	32.2	13.3	6.0	26.4
28.8	18.0	37.5	13.8	5.5	23.6
13.8	23.4	39.0	28.8	9.0	19.0

[1] Temperature range 2,500° to 3,000° F.

MEASUREMENT OF JET SOUND INTENSITIES

Because supersonic waves are claimed to be a cause of fatigue experienced by fused quartz workers, a study of audible and supersonic jet vibrations was made by means of an electrical amplifying device. The readings obtained in this study are only relative; the zero level corresponds to eighteen microvolts picked up by a Rochelle salt crystal microphone mounted at the focus of a deep parabolic reflector.

Comparison of the sound frequency characteristics of an ordinary large glass-blowing jet and the oxy-hydrogen quartz fusing jet is shown in figure 1. The sound intensity units are not standard deci-

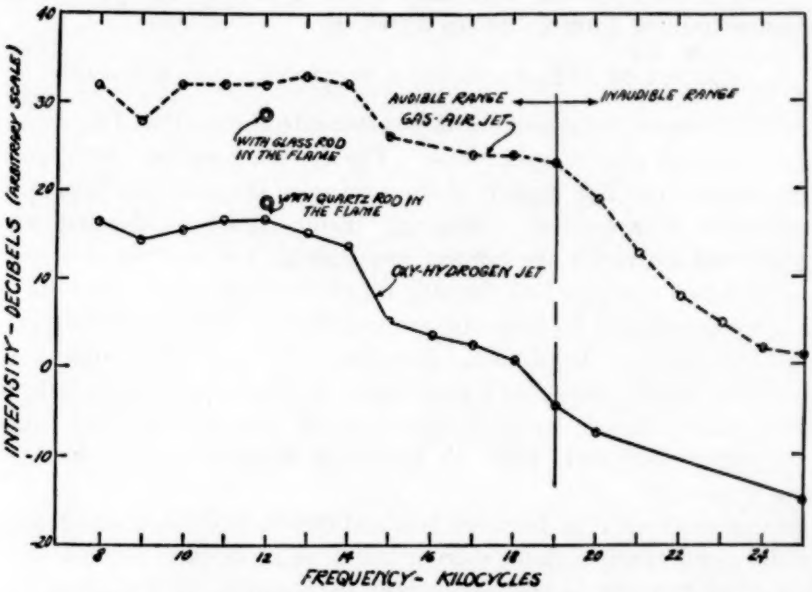

FIGURE 1.—Relative sound intensities of burners used for quartz fusing and glass blowing.

bels, but these curves show clearly the variation of intensity with frequency. At all frequencies the glass-blowing jet gives greater intensity, particularly in the range slightly above audible, about 17–20 kilocycles. The curves shown are for free flames, no quartz or glass being heated. Further experiments demonstrated that the presence of quartz in the jet changed the intensity of the sound slightly. When a quartz rod was placed in the oxy-hydrogen flame, the intensity increased slightly, about two decibels, whereas when a glass rod was placed in the oxy-gas flame, the intensity decreased about 3 decibels at 12 kilocycles. Any physiological effects from audible and supersonic vibrations should, therefore, be much less from quartz fusing operations than from ordinary glass blowing.

TEMPERATURE MEASUREMENTS

Air temperatures taken by the ordinary dry-bulb thermometers do not indicate the heat to which the quartz-fuser is exposed, because much of the heat is in the form of radiant energy. Even so, absence of exhaust ventilation often causes a large increase in air temperature. With room temperatures of approximately 80° F., temperatures near the worker's face increase within a few minutes to 90° F., and often to as high as 100° F. The radiant energy from quartz at fusing temperatures is largely in the visible and infra red range. The total radiation varies with the size and temperature of the piece being fused.

Quartz temperatures during fusing were determined with an optical pyrometer. During the experiments cited in this study, the temperatures ranged from 2,700° to 3,200° F.

CONTROL OF FUMES AND HEAT BY VENTILATION METHODS

Several important considerations enter into the design of an exhaust hood for fused quartz operations. The air temperatures near quartz fusing operations rise rapidly if the enclosure is small and inadequate ventilation is provided. Although water vapor is formed when oxygen and hydrogen are burned, the amount added from this source is small when compared to the amount of heat liberated. If sufficient fresh air is supplied to keep the room air below 100° F., the effects of humidity will be negligible. Removal of the heat, radiant and otherwise, is the important problem. A large hood, with asbestos baffles placed inside to intercept some of the radiant heat, and a generous air exhaust, offers a practical solution to the heat and fume problem.

It is estimated that between 300 and 600 B.T.U./min. are given off by the oxy-hydrogen flame during fusing of a one-inch tube; this rate of energy transfer is the equivalent of about 5 to 10 kilowatts in electrical energy. Nearly all this heat output must be dissipated to the surroundings or removed by the exhaust ventilation. If all the heat were removed by convection in 300 cu. ft./min. air exhaust, a rise in temperature of 55–110° F., depending on the rate of fusing, and an outlet temperature of less than 200° F., would result under the worst conditions. Actually, much heat is dissipated as radiant energy. Estimates indicate that about one-tenth of the heat supplied is radiated from the fused quartz and in addition there is appreciable radiation from the gases. When the hood surrounds the operation on three sides or more, it intercepts most of the radiant heat which raises the temperature of the walls and thus acts, itself, as a heat source. In order to avoid overheating from either source, it is recommended that large hoods and large air volumes be utilized.

Figure 2 illustrates the type of hood suggested for the control of quartz fumes and heat. Effective removal of fumes was obtained

with average air speeds of 100 feet per minute at the face of the hood when large volumes were handled. However, to effect greater cooling

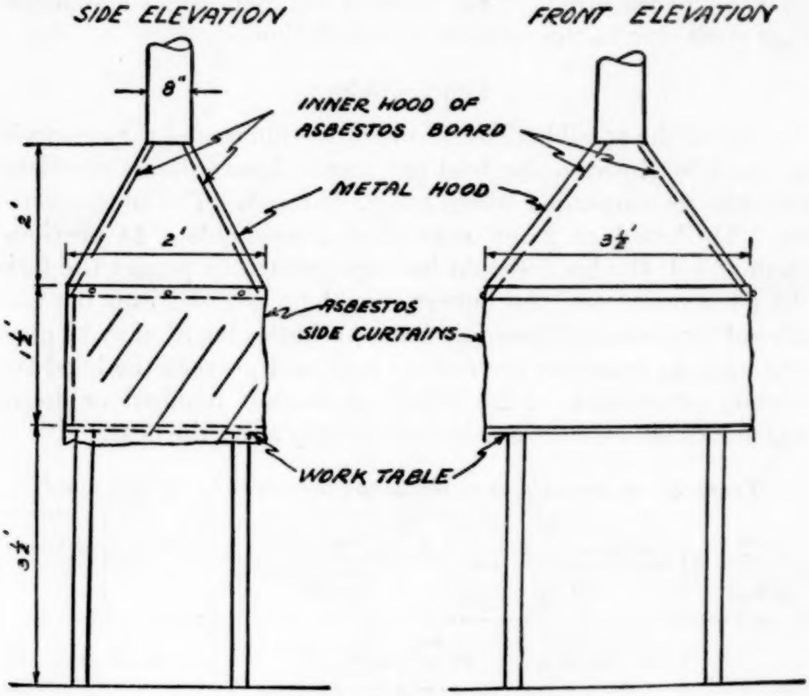

FIGURE 2.—Hood design suggested for quartz fusing.

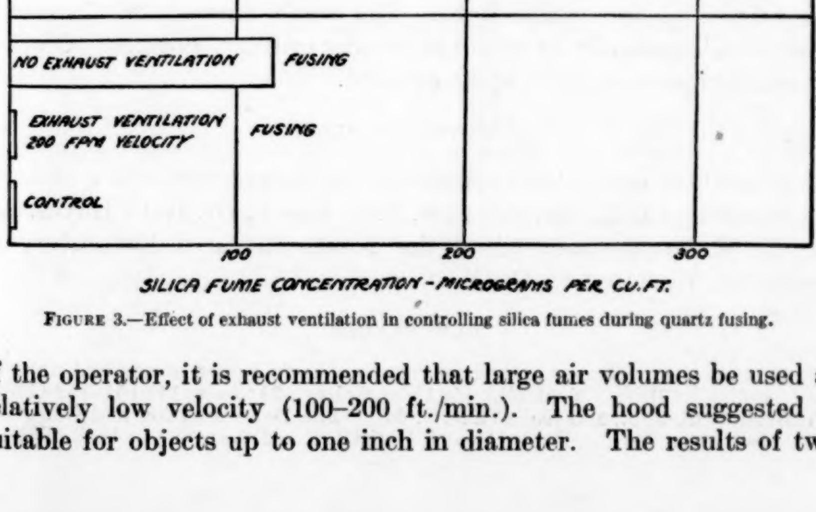

FIGURE 3.—Effect of exhaust ventilation in controlling silica fumes during quartz fusing.

of the operator, it is recommended that large air volumes be used at relatively low velocity (100–200 ft./min.). The hood suggested is suitable for objects up to one inch in diameter. The results of two

tests are shown graphically in figure 3. Repeated tests indicate complete removal of silica fumes and little trouble was experienced from hood overheating. The operator also felt considerable relief during work, due to the presence of ventilation.

CONCLUSIONS

In view of the possible toxic effects of the fumes and the discomfort occasioned by the excessive heat and fumes, local exhaust ventilation is strongly recommended where quartz is fused. The suggestions in table 3 are based on a few controlled experiments. As previously recommended, the hood should be large enough to permit the fusing to be done inside and the burner should be directed into the hood. Baffles of fire-resistant material, such as asbestos board, may be placed in the hood to intercept the radiant heat and prevent the hood from becoming overheated. High velocities are not required or desired, but generous air volumes are needed to carry away the heat.

TABLE 3.—*Suggested exhaust ventilation for quartz fusing operations*

Diameter of quartz tubing or piece to be fused (inches)	Air volume through exhaust hood (CFM)	Air velocity at fusing zone (ft./min.)	Diameter of quartz tubing or piece to be fused (inches)	Air volume through exhaust hood (CFM)	Air velocity at fusing zone (ft./min.)
1-1½	500-1,000	150-200	½-¾	150-300	100-150
¾-1	300-600	150-200	¼-½	50-150	100-150

From the study of audible and supersonic vibrations, it appears that quartz blowers are exposed to less intense vibrations in both the audible and supersonic ranges than glass blowers. Under ordinary conditions there should be no deleterious effects from this source.

Radiation from quartz at temperatures ranging from 2,500° to 3,200° F. is very intense in the infra red and visible ranges; although it drops rapidly in the shorter wave lengths there may be some ultraviolet. Goggles for this type of work should be good filters for infra red as well as for visible light. The small amount of ultraviolet emitted will generally be removed by any ordinary goggles. Glare is the most important effect to be avoided.

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INFLUENZA PREVALENCE

For the week ended February 25, 1939, 8,987 cases of influenza were reported, as compared with 6,895 for the preceding week, with 7,018 for the corresponding 5-year median, and with 8,822 for the 5-year average for the week. The figures for the current week are slightly above both the 5-year median and the 5-year average. The increase for the week of February 25 over the preceding week was 30 percent, as compared with an increase of 81 percent in the week of February 18.

For the week ended February 18, 1939, the pneumonia deaths reported in a group of large cities scattered throughout the United States and having an aggregate population of approximately 33,000,000, totaled 871, as compared with a 5-year average of 993, while the number of influenza deaths was 104 as compared with a 5-year average of 144. The total number of deaths in a group of 88 large cities was 9,939 for the week ended February 18, as compared with a 3-year average of 9,729 for 86 of these cities. None of these figures gives any indication of the presence of a Nation-wide epidemic of influenza.

The accompanying table gives the numbers of cases of influenza reported by States, arranged by geographical divisions, and by weeks since the beginning of the year. The largest numbers of cases have been reported by the South Atlantic and South Central States, although both Indiana and Illinois, in the East North Central area, reported considerable prevalence during the last two weeks of February.

Cases of influenza reported by weeks, Jan. 1–Feb. 25, 1939

Division and State	Jan. 7	Jan. 14	Jan. 21	Jan. 28	Feb. 4	Feb. 11	Feb. 18	Feb. 25
NEW ENGLAND								
Maine	1	3	2	10	4	1	8	25
New Hampshire				1				
Vermont								
Massachusetts								
Rhode Island								
Connecticut	10	6	13	4	7	26	22	29
MIDDLE ATLANTIC								
New York	44	57	37	155	159	183	137	101
New Jersey	14	24	12	19	56	61	99	44
Pennsylvania								
EAST NORTH CENTRAL								
Ohio								
Indiana	12	11	22	4	21	21	363	1,085
Illinois	18	12	60	30	36	227	955	1,478
Michigan			1	2		1	39	255
Wisconsin	62	65	52	47	68	65	56	346

Cases of influenza reported by weeks, Jan. 1–Feb. 25, 1939—Continued

Division and State	Jan. 7	Jan. 14	Jan. 21	Jan. 28	Feb. 4	Feb. 11	Feb. 18	Feb. 25
WEST NORTH CENTRAL								
Minnesota	-------	2	3	2	-------	1	3	24
Iowa	-------	4	10	2	1	8	27	291
Missouri	70	59	24	33	24	42	137	-------
North Dakota	34	11	12	6	27	15	14	64
South Dakota	6	-------	-------	2	1	10	3	6
Nebraska	-------	-------	-------	1	-------	-------	-------	-------
Kansas	16	9	9	6	6	3	9	77
SOUTH ATLANTIC								
Delaware	-------	-------	-------	-------	-------	-------	-------	-------
Maryland	4	5	12	10	61	103	182	209
District of Columbia	2	2	6	-------	5	5	18	25
Virginia	454	420	282	617	1,100	553	1,338	1,604
West Virginia	21	13	34	41	21	26	33	36
North Carolina	3	7	28	9	9	18	71	230
South Carolina	909	495	865	649	772	701	972	592
Georgia	133	136	143	110	131	118	139	110
Florida	1	1	2	5	-------	1	1	-------
EAST SOUTH CENTRAL								
Kentucky	56	65	37	27	198	51	478	405
Tennessee	36	64	87	109	58	75	63	83
Alabama	158	191	188	169	259	186	160	180
Mississippi	-------	-------	-------	-------	-------	-------	-------	-------
WEST SOUTH CENTRAL								
Arkansas	181	203	145	139	159	87	113	182
Louisiana	7	36	12	8	10	20	11	9
Oklahoma	222	149	119	193	162	207	129	193
Texas	492	716	531	703	699	621	983	737
MOUNTAIN								
Montana	5	26	33	50	25	42	35	200
Idaho	4	2	1	1	1	-------	-------	12
Wyoming	-------	-------	-------	-------	-------	-------	-------	-------
Colorado	21	21	31	45	35	93	125	121
New Mexico	2	1	21	10	6	9	1	3
Arizona	138	117	132	81	68	114	82	94
Utah	7	1	2	9	20	24	16	44
PACIFIC								
Washington	-------	4	1	-------		1	3	-------
Oregon	71	39	46	53	25	40	42	34
California	41	41	82	33	76	43	28	59
Total	3,255	3,018	3,097	3,395	4,310	3,802	6,805	8,987

DEATHS DURING WEEK ENDED FEBRUARY 11, 1939

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Feb. 11, 1939	Corresponding week, 1938
Data from 88 large cities of the United States:		
Total deaths	9,667	[1] 8,797
Average for 3 prior years	[1] 9,768	
Total deaths, first 6 weeks of year	55,504	54,756
Deaths under 1 year of age	572	[1] 528
Average for 3 prior years	[1] 578	
Deaths under 1 year of age, first 6 weeks of year	3,262	3,244
Data from industrial insurance companies:		
Policies in force	68,102,528	69,795,000
Number of death claims	14,277	13,550
Death claims per 1,000 policies in force, annual rate	10.9	10.1
Death claims per 1,000 policies, first 6 weeks of year, annual rate	10.2	10.0

[1] Data for 86 cities.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (.....) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

Cases of certain diseases reported by telegraph by State health officers for the week ended Feb. 18, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934-38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934-38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934-38, median
NEW ENG.												
Maine	36	6	1	1	48	8	13	9	91	15	87	87
New Hampshire	0	0	1	0	......	......	2	......	71	7	45	30
Vermont	0	0	1	0	......	......	......	......	94	7	163	45
Massachusetts	2	2	7	8	......	......	......	......	1,335	1,136	209	706
Rhode Island	8	1	0	1	......	......	......	......	107	14	1	17
Connecticut	0	0	7	3	65	22	10	12	1,760	593	10	122
MID. ATL.												
New York	9	23	35	42	[1] 95	[1] 137	[1] 24	[1] 24	419	1,048	1,290	1,290
New Jersey	17	14	26	11	118	99	23	23	32	27	1,595	407
Pennsylvania	20	39	33	46	......	......	......	......	78	153	6,972	1,056
E. NO. CEN.												
Ohio	32	41	19	42	......	......	......	131	20	26	1,344	436
Indiana	36	24	45	35	539	363	22	57	15	10	455	450
Illinois	18	28	38	38	626	955	24	40	20	31	6,278	512
Michigan [2]	13	12	10	10	41	39	3	8	448	424	2,284	56
Wisconsin	2	1	6	3	98	56	70	98	2,359	1,343	3,137	1,164
W. NO. CEN.												
Minnesota	10	5	2	2	6	3	3	3	2,396	1,236	85	195
Iowa	22	11	8	7	55	27	15	15	359	177	100	78
Missouri	13	10	8	31	176	137	153	308	14	11	1,183	745
North Dakota	15	2	0	2	102	14	......	2	1,081	148	15	15
South Dakota	15	2	0	1	23	3	......	......	2,419	322	......	3
Nebraska	23	6	14	4	......	......	9	9	237	62	16	16
Kansas	36	13	5	8	25	9	2	40	73	26	371	121

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Feb. 18, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median
SO. ATL.												
Delaware	39	2	3	1	------	------	------	1	------	------	34	71
Maryland [2]	6	2	15	11	561	182	31	45	3,620	1,174	54	214
Dist. of Col.	24	3	7	7	146	18	1	3	81	10	6	7
Virginia	36	19	15	17	2,508	1,338	------	------	330	176	439	439
West Virginia	19	7	7	13	89	33	80	88	56	21	391	18
North Carolina [3]	42	29	17	23	104	71	25	93	1,265	866	2,357	653
South Carolina [2]	46	17	4	4	2,655	972	635	841	82	30	418	54
Georgia [3]	18	11	10	11	231	139	------	481	267	161	1,576	------
Florida	12	4	5	5	3	1	5	18	160	53	413	48
E. SO. CEN.												
Kentucky	23	13	19	15	831	478	49	67	184	106	689	265
Tennessee	18	10	5	16	111	63	101	245	210	119	511	67
Alabama [3]	25	14	10	15	282	160	260	686	500	284	629	525
Mississippi [2] [3]	15	6	5	5	------	------	------	------	------	------	------	------
W. SO. CEN.												
Arkansas	25	10	13	6	280	113	219	80	265	107	445	22
Louisiana	36	15	10	16	27	11	15	24	351	145	11	40
Oklahoma	16	8	7	8	260	129	217	217	189	94	34	34
Texas [3]	42	51	58	58	814	983	859	981	189	228	170	202
MOUNTAIN												
Montana	9	1	1	1	328	35	------	49	3,426	366	8	16
Idaho	51	5	1	0	------	------	10	6	367	36	3	19
Wyoming	0	0	1	0	------	------	1	------	371	17	3	3
Colorado	77	16	13	7	602	125	------	------	438	91	393	63
New Mexico	12	1	6	6	12	1	1	9	519	42	83	63
Arizona	74	6	1	1	1,006	82	157	151	258	21	15	22
Utah [3]	0	0	5	0	159	16	------	------	804	81	158	11
PACIFIC												
Washington	0	0	2	1	9	3	------	3	836	271	10	174
Oregon	10	2	5	2	209	42	71	71	134	27	16	49
California	26	32	28	30	23	28	57	306	2,078	2,534	205	530
Total	21	524	539	596	326	6,895	3,167	8,591	561	13,876	34,711	24,425
7 weeks	23	4,042	4,594	4,864	187	27,772	21,587	26,580	433	75,068	162,973	108,516

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median
NEW ENG.												
Maine	0	0	0	0	0	0	0	0	169	28	9	23
New Hampshire	0	0	0	0	0	0	0	0	41	4	47	8
Vermont	0	0	0	0	0	0	0	0	161	12	7	11
Massachusetts	2.4	2	2	3	0	0	0	0	261	222	311	252
Rhode Island	8	1	0	0	0	0	0	0	130	17	19	19
Connecticut	0	0	0	0	0	0	0	0	273	92	109	67
MID. ATL.												
New York	1.6	4	9	9	0	0	0	0	259	648	771	771
New Jersey	1.2	1	3	3	1.2	1	1	0	198	166	139	204
Pennsylvania	2.5	5	4	4	0	0	0	1	266	524	552	666

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Feb. 18, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median
E. NO. CEN.												
Ohio	2.3	3	4	9	0	0	1	1	379	493	198	473
Indiana	1.5	1	0	3	3	2	0	0	343	231	111	254
Illinois	0	0	0	8	0.7	1	0	1	334	510	684	668
Michigan [2]	0	0	4	4	0	0	1	1	569	538	624	517
Wisconsin	0	0	1	1	0	0	0	0	499	284	264	320
W. NO. CEN.												
Minnesota	0	0	0	1	0	0	0	0	211	109	151	151
Iowa	2.0	1	2	2	0	0	0	0	288	142	203	131
Missouri	4	3	1	3	0	0	2	1	188	146	170	186
North Dakota	0	0	0	0	0	0	0	0	66	9	42	59
South Dakota	0	0	0	1	0	0	0	0	113	15	11	18
Nebraska	0	0	1	1	0	0	1	0	344	90	57	57
Kansas	0	0	1	1	0	0	0	0	475	170	201	201
SO. ATL.												
Delaware	0	0	0	0	0	0	0	0	0	0	11	11
Maryland [2]	6	2	2	2	0	0	1	0	102	33	56	85
Dist. of Col	8	1	0	2	0	0	0	0	162	20	20	21
Virginia	1.9	1	8	8	0	0	0	0	84	45	37	43
West Virginia	11	4	11	3	5	2	1	1	202	75	53	57
North Carolina [3]	0	0	3	2	1.5	1	2	0	112	77	33	42
South Carolina [3]	5	2	1	1	5	2	0	0	16	6	14	4
Georgia [3]	3	2	2	2	1.7	1	0	0	32	19	18	18
Florida	0	0	3	0	0	0	2	0	33	11	22	8
E. SO. CEN.												
Kentucky	14	8	15	13	3	2	0	0	181	104	106	54
Tennessee	1.8	1	2	6	0	0	1	0	83	47	12	43
Alabama [3]	11	6	5	3	0	0	0	1	35	20	28	19
Mississippi [2,3]	10	4	2	2	0	0	1	0	10	4	8	9
W. SO. CEN.												
Arkansas	2.5	1	3	2	0	0	0	0	15	6	17	14
Louisiana	0	0	3	1	2.4	1	0	0	29	12	7	25
Oklahoma	4	2	1	5	0	0	1	0	105	52	44	31
Texas [2]	5	6	1	6	0	0	2	0	96	116	128	108
MOUNTAIN												
Montana	0	0	0	0	0	0	0	0	300	32	18	18
Idaho	0	0	0	0	0	0	3	1	71	7	22	22
Wyoming	0	0	0	0	0	0	0	0	153	7	13	11
Colorado	0	0	0	0	0	0	1	0	178	37	33	56
New Mexico	0	0	0	0	0	0	0	0	235	19	10	34
Arizona	0	0	0	2	0	0	0	0	110	9	13	24
Utah [2]	0	0	0	0	0	0	0	0	328	33	77	77
PACIFIC												
Washington	3	1	2	1	0	0	1	1	173	56	57	52
Oregon	0	0	2	0	0	0	2	0	273	55	68	48
California	0.8	1	4	8	0	0	2	3	136	166	176	252
Total	2.5	63	102	134	0.5	13	26	25	219	5,518	5,781	7,067
7 weeks	2.2	386	654	673	0.7	115	150	150	212	37,320	41,718	43,602

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Feb. 18, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases	1934–38, median	Feb. 18, 1939, rate	Feb. 18, 1939, cases	Feb. 19, 1938, cases
NEW ENG.											
Maine	0	0	0	0	6	1	3	0	235	39	52
New Hampshire	0	0	0	0	0	0	0	0	0	0	2
Vermont	0	0	0	0	0	0	2	0	521	39	25
Massachusetts	0	0	0	0	4	3	2	2	382	325	104
Rhode Island	0	0	0	0	0	0	0	0	481	63	37
Connecticut	0	0	0	0	3	1	0	0	270	91	45
MID. ATL.											
New York	0	0	0	0	2	6	3	4	221	552	505
New Jersey	0	0	0	0	0	0	3	2	512	430	200
Pennsylvania	0	0	0	0	3	6	3	11	200	394	361
E. NO. CEN.											
Ohio	32	41	4	1	4	5	0	2	155	202	87
Indiana	119	80	17	2	7	5	0	2	49	33	27
Illinois	14	21	25	14	2	3	5	5	180	274	76
Michigan [2]	21	20	15	3	4	4	19	2	252	238	187
Wisconsin	9	5	4	18	0	0	2	2	557	317	102
W. NO. CEN.											
Minnesota	16	8	21	4	0	0	1	0	48	25	39
Iowa	71	35	46	8	2	1	0	1	28	14	34
Missouri	8	6	47	7	0	0	7	7	46	36	52
North Dakota	7	1	41	1	7	1	0	0	51	7	19
South Dakota	60	8	0	3	0	0	0	0	38	5	26
Nebraska	23	6	16	16	0	0	0	0	31	8	10
Kansas	14	5	13	13	11	4	6	1	28	10	138
SO. ATL.											
Delaware	0	0	0	0	0	0	0	0	20	1	8
Maryland [2]	0	0	0	0	3	1	4	1	102	33	64
Dist. of Col	0	0	0	0	8	1	1	1	195	24	9
Virginia	0	0	0	0	11	6	3	5	137	73	99
West Virginia	0	0	0	0	8	3	10	2	81	30	59
North Carolina [3]	0	0	2	0	7	5	1	1	367	251	343
South Carolina [3]	0	0	0	0	16	6	1	1	224	82	68
Georgia [3]	2	1	1	0	7	4	5	3	55	33	33
Florida	3	1	0	0	3	1	2	2	63	21	9
E. SO. CEN.											
Kentucky	24	14	14	0	10	6	3	3	47	27	98
Tennessee	2	1	10	0	5	3	1	1	90	51	18
Alabama [3]	0	0	0	0	7	4	1	2	44	25	21
Mississippi [2] [3]	0	0	8	1	3	1	3	3	------	------	------
W. SO. CEN.											
Arkansas	12	5	20	4	10	4	4	2	47	19	144
Louisiana	0	0	1	0	39.	16	21	11	34	14	20
Oklahoma	32	16	12	3	2	1	3	3	2	1	29
Texas [3]	38	46	19	19	7	9	19	19	128	155	214
MOUNTAIN											
Montana	9	1	6	6	0	0	1	0	37	4	19
Idaho	41	4	19	4	10	1	0	1	10	1	14
Wyoming	0	0	0	1	0	0	0	0	0	0	17
Colorado	87	18	7	8	0	0	1	0	246	51	8
New Mexico	12	1	0	0	0	0	0	3	284	23	17
Arizona	0	0	1	0	0	0	2	0	61	5	19
Utah [2]	0	0	2	0	0	0	0	0	278	28	30
PACIFIC											
Washington	3	1	34	17	0	0	0	1	40	13	141
Oregon	15	3	23	3	0	0	1	1	25	5	43
California	14	17	25	9	2	3	1	3	63	77	293
Total	15	365	453	253	5	115	144	144	168	4,149	3,965
7 weeks	16	2,750	4,071	1,492	4	776	850	850	116	[4]30,160	27,869

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Feb. 18, 1939, 27 cases as follows: North Carolina, 1; South Carolina, 2; Georgia, 15; Alabama, 3; Mississippi, 1; Texas, 5.
[4] The figures for whooping cough for the first 6 weeks of 1939, published in the Public Health Reports for Feb. 24, 1939, p. 316, should have been 26,011 instead of 16,011.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningitis, meningococcus	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid and paratyphoid fever
1938										
New Hampshire:										
May	0						0		0	2
June	0						1		0	1
September	0						0		0	3
November	0						0		0	0
December	1						0		0	0
Wisconsin:										
February	4	26	228		13,108		0	844	19	4
April	2	8	120		12,292		3	662	45	7
October	3	10	189		335		1	635	11	3
Wyoming:										
September	0	5			17		0	11	1	4
November	0	1			12		0	17	1	3
January 1939										
Florida	4	37	9	24	227	7	4	41	1	4
Georgia	2	57	605	114	250	30	7	108	11	10
Iowa	1	40	16		612		0	528	155	5
Maine	0	33	19		54			47	0	1
Maryland	3	26	60		2,638		0	215	0	8
Missouri	5	82	186	2	32		0	599	58	11
Nebraska	2	14	1		169		3	150	21	6
New Jersey	4	57	92		108		3	385	0	10
New Mexico	11	11	40	1	114	1	1	91	12	9
New York	25	101		5	4,900		1	2,078	0	28
Tennessee	9	44	296	10	278	7	1	186	4	5
Texas	6	184	2,442	102	536	85	5	395	65	38

1938

	Cases
Wisconsin:	
February—	
Chickenpox	1,656
Encephalitis, epidemic or lethargic	1
German measles	58
Mumps	846
Septic sore throat	7
Undulant fever	2
Whooping cough	530
April—	
Chickenpox	1,267
Encephalitis, epidemic or lethargic	1
German measles	112
Mumps	1,104
Septic sore throat	6
Undulant fever	6
Whooping cough	856
October—	
Chickenpox	1,225
Encephalitis, epidemic or lethargic	3
Mumps	172
Septic sore throat	5
Whooping cough	1,639
Wyoming:	
September—	
Chickenpox	13
Encephalitis, epidemic or lethargic	2
Mumps	17
Rocky Mountain spotted fever	1
Septic sore throat	7
Tularaemia	4
Undulant fever	1
Whooping cough	19

1938

	Cases
Wyoming—Continued.	
November—	
Chickenpox	29
German measles	1
Mumps	39
Septic sore throat	2
Vincent's infection	1
Whooping cough	13

January 1939

	Cases
Anthrax:	
New Jersey	2
New York	2
Chickenpox:	
Florida	138
Georgia	310
Iowa	558
Maine	321
Maryland	532
Missouri	413
Nebraska	179
New Jersey	1,534
New Mexico	92
New York	3,301
Tennessee	357
Texas	978
Conjunctivitis, infectious:	
Georgia	2
Dengue:	
Texas	3
Diarrhea:	
Maryland	14
Dysentery:	
Florida (amoebic)	2
Florida (bacillary)	1
Georgia (amoebic)	15
Georgia (bacillary)	8

January 1939—Continued

	Cases
Dysentery—Continued.	
Maine (bacillary)	7
Maryland (amoebic)	4
Maryland (bacillary)	7
Maryland (unspecified)	2
Missouri (amoebic)	6
New Mexico (amoebic)	2
New Mexico (bacillary)	1
New Mexico (unspecified)	1
New York (amoebic)	3
New York (bacillary)	41
Tennessee (amoebic)	1
Tennessee (bacillary)	7
Texas (bacillary)	41
Encephalitis, epidemic or lethargic:	
Iowa	2
Nebraska	4
New Jersey	2
New Mexico	3
New York	7
Tennessee	1
Texas	1
German measles:	
Florida	2
Iowa	4
Maine	13
Maryland	22
New Jersey	53
New Mexico	2
New York	120
Tennessee	4
Hookworm disease:	
Florida	377
Georgia	2,130

Summary of monthly reports from States—Continued

January 1939—Continued

Disease	Cases
Impetigo contagiosa:	
Maryland	24
Tennessee	5
Leprosy:	
New Mexico	1
Texas	3
Mumps:	
Florida	41
Georgia	187
Iowa	143
Maine	22
Maryland	202
Missouri	362
Nebraska	28
New Jersey	495
New Mexico	2
Tennessee	71
Texas	99
Ophthalmia neonatorum:	
New Jersey	11
New Mexico	1
New York	4
Tennessee	3
Texas	7
Puerperal septicemia:	
Georgia	1
New Mexico	3
Tennessee	2
Rabies in animals:	
Florida	2
Iowa	7
Missouri	3
New Jersey	101
New Mexico	11
New York [1]	18
Texas	1
Rabies in man:	
Georgia	1
New Jersey	1
Relapsing fever:	
Texas	4
Rocky Mountain spotted fever:	
Maryland	1
Septic sore throat:	
Florida	1
Georgia	45
Iowa	16
Maine	1
Maryland	25
Missouri	70
Nebraska	1
New Jersey	33
New Mexico	10
New York	140
Tennessee	10
Tetanus:	
Florida	1
Georgia	3
New York	3
Tennessee	1
Trachoma:	
Missouri	9
New Jersey	1
New Mexico	2
Texas	3
Trichinosis:	
Maine	1
Maryland	1
New York	20
Tularaemia:	
Georgia	11
Iowa	16
Maryland	5
Missouri	29
New Jersey	2
New Mexico	3
New York	1
Tularaemia—Contd.	
Tennessee	7
Texas	1
Typhus fever:	
Florida	3
Georgia	70
Maryland	1
Tennessee	4
Texas	33
Undulant fever:	
Florida	1
Georgia	4
Iowa	4
Maine	3
Maryland	3
Nebraska	1
New Jersey	9
New Mexico	3
New York	13
Tennessee	2
Texas	19
Vincent's infection:	
Florida	20
Maine	7
Maryland	9
New York [1]	79
Tennessee	5
Whooping cough:	
Florida	49
Georgia	100
Iowa	73
Maine	128
Maryland	175
Missouri	68
Nebraska	18
New Jersey	1,892
New Mexico	96
New York	2,614
Tennessee	86
Texas	375

[1] Exclusive of New York City.

CASES OF VENEREAL DISEASES REPORTED FOR DECEMBER 1938

These reports are published monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The figures are taken from reports received from State and city health officers. They are preliminary and are therefore subject to correction. It is hoped that the publication of these reports will stimulate more complete reporting of these diseases.

Reports from States

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Alabama	1,750	6.04	295	1.02
Arizona	139	3.37	106	2.57
Arkansas	775	3.78	233	1.14
California	1,461	2.37	1,055	1.71
Colorado	123	1.15	56	.52
Connecticut	189	1.09	98	.56
Delaware	193	7.39	35	1.34
District of Columbia	513	8.18	310	4.94
Florida	1,570	9.40	111	.66
Georgia	2,287	7.41	332	1.08
Idaho	37	.75	13	.26
Illinois	2,725	3.46	1,224	1.55
Indiana	401	1.15	134	.39
Iowa	247	.97	149	.58
Kansas	88	.47	42	.23
Kentucky	1,058	3.62	279	.96
Louisiana	522	2.45	102	.48
Maine	41	.48	38	.44
Maryland	1,011	6.02	267	1.59
Massachusetts	480	1.08	400	.90
Michigan	1,232	2.55	584	1.21
Minnesota	220	.83	166	.63
Mississippi	1,743	8.62	2,429	12.01

Reports from States—Continued

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Missouri	365	.92	223	.56
Montana	63	1.17	42	.78
Nebraska	67	.49	74	.54
Nevada [1]				
New Hampshire	25	.49	15	.29
New Jersey	844	1.94		
New Mexico	117	2.77	30	.71
New York	5,042	3.89	1,894	1.46
North Carolina	4,274	12.24	572	1.64
North Dakota	57	.81	25	.35
Ohio	1,161	1.72	245	.36
Oklahoma [1]				
Oregon	100	.97	87	.85
Pennsylvania	1,055	1.04	162	.16
Rhode Island	116	1.70	33	.48
South Carolina	896	4.78	444	2.37
South Dakota	22	.32	31	.45
Tennessee	1,207	4.17	421	1.46
Texas	856	1.39	300	.49
Utah [1]				
Vermont	13	.34	17	.44
Virginia	1,448	5.35	239	.88
Washington	189	1.14	216	1.30
West Virginia	469	2.51	181	.97
Wisconsin	39	.13	90	.31
Wyoming	4	.17		
Total	37,234	2.95	13,799	1.09

Reports from cities of 200,000 population or over

Akron, Ohio [2]				
Atlanta, Ga	317	10.56	111	3.70
Baltimore, Md	638	7.64	189	2.26
Birmingham, Ala	223	7.58	32	1.09
Boston, Mass	173	2.18	138	1.74
Buffalo, N. Y	145	2.41	38	.63
Chicago, Ill	1,896	5.17	827	2.26
Cincinnati, Ohio [1]				
Cleveland, Ohio	209	2.21	62	.66
Columbus, Ohio	76	2.42	28	.89
Dallas, Tex	206	6.78	96	3.16
Dayton, Ohio	68	3.07		
Denver, Colo	79	2.62	41	1.76
Detroit, Mich	509	3.30	288	1.59
Houston, Tex	228	6.36	65	1.81
Indianapolis, Ind	21	.54	28	.73
Jersey City, N. J	30	.92	13	.40
Kansas City, Mo	44	1.02	2	.05
Los Angeles, Calif. [1]				
Louisville, Ky	319	9.41	54	1.59
Memphis, Tenn. [1]				
Milwaukee, Wis. [2]				
Minneapolis, Minn	64	1.28	50	1.00
Newark, N. J	264	5.81	132	2.91
New Orleans, La	98	2.00	46	.94
New York, N. Y	3,695	4.93	1,417	1.89
Oakland, Calif	35	1.12	18	.57
Omaha, Nebr	29	1.30	16	.72
Philadelphia, Pa	505	2.52		
Pittsburgh, Pa	315	4.47	16	.23
Portland, Oreg	71	2.22	79	2.47
Providence, R. I. [1]				
Rochester, N. Y	37	1.08	32	.94
St. Louis, Mo	246	2.92	78	.93
St. Paul, Minn	29	1.01	20	.70
San Antonio, Tex	135	5.16	67	2.56
San Francisco, Calif	218	3.16	180	2.61
Seattle, Wash	18	.46	27	.70
Syracuse, N. Y	78	3.46	19	.84
Toledo, Ohio [1]				
Washington, D. C	513	8.18	310	4.94

[1] No report for current month. [2] Not reporting.

WEEKLY REPORTS FROM CITIES

City reports for week ended Feb. 11, 1939

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	198	1,122	150	5,013	983	2,054	25	395	18	1,192	--------
Current week [1]	158	688	73	4,360	813	1,657	72	322	17	1,487	--------
Maine:											
Portland	0	------	0	0	6	1	0	0	0	1	27
New Hampshire:											
Concord	0	------	0	0	0	0	0	0	0	0	9
Manchester	0	------	1	0	2	5	0	1	0	0	12
Nashua	0	------	0	0	4	0	0	0	0	0	10
Vermont:											
Barre	0	------	0	0	1	0	0	0	0	0	3
Burlington	0	------	0	0	0	0	0	0	0	0	10
Rutland	0	------	0	0	2	0	0	0	0	0	5
Massachusetts:											
Boston	0	------	2	196	19	79	0	4	1	65	261
Fall River	0	------	0	0	1	1	0	2	0	1	35
Springfield	0	1	0	32	0	5	0	2	0	2	35
Worcester	0	------	0	0	7	25	0	1	0	34	48
Rhode Island:											
Pawtucket	0	------	0	1	4	0	0	0	1	2	21
Providence	0	------	0	6	4	4	0	0	0	51	71
Connecticut:											
Bridgeport	0	1	0	0	5	6	0	2	0	1	40
Hartford	0	1	0	244	5	11	0	0	0	6	37
New Haven	0	3	1	8	3	4	0	0	0	4	49
New York:											
Buffalo	0	------	1	81	11	57	0	5	0	44	128
New York	36	183	17	42	237	262	0	77	0	158	1,958
Rochester	0	------	0	84	5	27	0	1	1	10	85
Syracuse	0	------	0	68	8	10	0	0	0	28	65
New Jersey:											
Camden	3	5	1	0	4	7	0	0	0	10	31
Newark	1	19	1	3	13	29	0	8	0	78	149
Trenton	0	------	0	0	3	12	0	1	0	27	47
Pennsylvania:											
Philadelphia	3	12	6	23	41	59	0	15	1	109	544
Pittsburgh	3	10	2	6	22	27	0	7	0	34	168
Reading	2	------	0	2	2	2	0	1	0	1	37
Scranton	2	------	-------	0	-------	44	0	-------	0	12	--------
Ohio:											
Cincinnati	3	1	0	1	7	23	1	2	0	3	117
Cleveland	4	38	0	4	21	67	0	10	0	61	206
Columbus	2	------	0	3	8	11	0	6	0	8	91
Toledo	0	------	0	0	4	27	0	2	0	45	77
Indiana:											
Anderson	0	------	0	0	0	6	0	0	0	1	9
Fort Wayne	1	------	0	0	1	7	0	0	2	1	25
Indianapolis	16	------	0	7	12	67	50	3	0	6	113
Muncie	0	------	0	1	1	0	1	0	0	0	9
South Bend	0	------	0	0	6	2	0	0	0	2	19
Terre Haute	2	------	0	0	1	1	1	0	0	0	17
Illinois:											
Alton	0	------	0	0	1	5	0	0	0	0	12
Chicago	12	188	3	12	64	210	0	48	0	210	799
Elgin	0	------	0	2	0	14	0	0	0	3	14
Moline	0	------	0	0	0	0	0	0	0	1	7
Springfield	0	1	0	0	2	6	1	0	0	1	22
Michigan:											
Detroit	4	28	2	5	14	132	0	16	1	111	302
Flint	1	------	0	205	8	26	0	0	0	1	17
Grand Rapids	0	------	2	3	3	34	0	0	1	0	49
Wisconsin:											
Kenosha	0	------	0	0	0	5	0	0	0	19	11
Madison	0	------	-------	1	-------	3	0	-------	0	12	12
Milwaukee	0	------	0	1	9	73	0	3	0	117	119
Racine	0	------	0	12	0	7	0	1	0	4	20
Superior	0	------	0	0	0	3	0	1	0	1	11

[1] Figures for Boise, Idaho, estimated; report not received.

City reports for week ended Feb. 11, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Minnesota:											
Duluth	0	------	0	0	1	5	0	1	0	1	17
Minneapolis	2	------	1	232	3	29	0	0	0	36	94
St. Paul	0	------	0	569	2	32	0	1	0	14	67
Iowa:											
Davenport	0	------	------	0	------	7	2	------	0	0	------
Des Moines	1	------	0	0	0	28	2	0	0	1	28
Sioux City	0	------	------	16	------	7	0	------	0	3	------
Waterloo	1	------	------	0	------	16	0	------	0	0	------
Missouri:											
Kansas City	1	------	0	0	12	20	0	2	0	0	118
St. Joseph	0	------	0	0	4	1	0	2	1	0	30
St. Louis	3	------	1	1	6	36	1	4	0	29	205
North Dakota:											
Fargo	0	------	------	0	0	3	0	0	0	0	6
Grand Forks	0	------	------	0	------	0	0	------	0	0	------
Minot	1	------	0	29	0	0	0	0	0	0	3
South Dakota:											
Aberdeen	0	------	------	11	------	0	0	------	0	0	------
Sioux Falls	1	------	0	75	0	0	0	0	0	0	10
Nebraska:											
Lincoln	0	------	------	2	------	3	1	------	0	2	------
Omaha	0	------	0	3	4	3	1	0	0	0	44
Kansas:											
Lawrence	0	1	0	0	0	1	0	0	0	0	6
Topeka	0	------	0	1	2	1	0	0	0	0	18
Wichita	0	------	0	0	3	1	0	0	0	2	20
Delaware:											
Wilmington	1	------	0	0	4	2	0	0	0	0	27
Maryland:											
Baltimore	1	76	2	1,016	32	25	0	13	1	21	265
Cumberland	0	------	0	0	1	0	0	0	0	1	14
Frederick	1	------	0	0	1	0	0	0	0	5	3
Dist. of Col.:											
Washington	5	8	5	21	17	18	0	9	0	45	172
Virginia:											
Lynchburg	0	------	1	18	0	0	0	0	0	19	16
Norfolk	2	15	0	0	7	2	0	0	0	0	33
Richmond	0	------	2	7	2	8	0	0	0	7	53
Roanoke	0	------	0	0	0	0	0	0	0	0	17
West Virginia:											
Charleston	0	------	0	0	4	2	0	1	0	0	24
Huntington	1	------	------	0	------	0	0	------	0	0	------
Wheeling	0	------	1	0	3	3	0	0	0	8	14
North Carolina:											
Gastonia	0	------	------	0	------	0	0	------	0	0	------
Raleigh	1	------	0	1	2	1	0	0	0	0	9
Wilmington	0	------	1	0	0	1	0	0	0	12	9
Winston-Salem	2	------	------	133	------	0	0	------	0	1	------
South Carolina:											
Charleston	0	37	1	0	2	1	0	0	1	11	24
Florence	0	------	0	0	1	0	0	0	0	0	8
Greenville	0	------	0	0	4	0	0	0	0	4	14
Georgia:											
Atlanta	2	5	0	0	7	11	0	5	0	0	68
Brunswick	0	------	0	7	0	0	0	0	0	0	3
Savannah	0	28	0	2	2	0	0	0	0	3	26
Florida:											
Miami	0	------	0	0	6	0	0	2	0	4	35
Tampa	2	------	0	69	0	1	0	1	0	0	18
Kentucky:											
Ashland	0	------	0	0	0	0	0	0	0	0	10
Covington	0	------	0	0	4	12	0	1	0	0	15
Lexington	0	------	0	0	2	2	0	0	0	0	18
Louisville	0	------	0	1	7	18	0	1	0	1	78
Tennessee:											
Knoxville	0	4	0	0	5	2	0	1	1	0	34
Memphis	0	------	2	3	12	8	0	5	0	4	110
Nashville	0	------	0	0	1	4	0	2	0	1	47
Alabama:											
Birmingham	1	------	2	1	7	8	0	1	0	0	67
Mobile	0	------	1	0	2	0	0	0	2	0	26
Montgomery	0	------	------	7	------	0	0	------	0	0	------
Arkansas:											
Fort Smith	1	1	------	0	------	0	0	------	0	0	------
Little Rock	0	------	2	0	4	0	0	1	0	0	7

City reports for week ended Feb. 11, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Louisiana:											
Lake Charles	0	------	0	39	2	0	0	0	0	0	9
New Orleans	13	11	5	52	17	3	0	6	4	3	143
Shreveport	1	------	0	3	3	2	0	2	0	0	54
Oklahoma:											
Oklahoma City	0	------	0	2	10	10	1	2	0	0	62
Tulsa	1	------	------	0	------	8	0	------	0	0	------
Texas:											
Dallas	6	2	2	2	7	12	12	3	0	0	82
Fort Worth	1	10	1	0	6	7	0	2	0	0	52
Galveston	3	------	0	0	1	0	0	2	0	0	17
Houston	1	------	1	27	13	3	0	3	0	0	101
San Antonio	1	9	2	0	13	0	0	7	0	0	68
Montana:											
Billings	0	------	0	28	0	0	0	0	0	0	8
Great Falls	0	------	0	3	1	1	0	0	0	0	9
Helena	0	------	0	65	3	2	0	0	0	1	9
Missoula	0	1	1	38	1	0	0	0	0	0	9
Idaho:											
Boise	------	------	------	------	------	------	------	------	------	------	------
Colorado:											
Colorado Springs	0	------	0	36	2	6	0	1	0	11	12
Denver	5	------	0	6	15	6	0	5	0	24	119
Pueblo	0	------	0	5	3	2	1	0	0	0	12
New Mexico:											
Albuquerque	0	------	0	0	0	3	0	1	2	0	14
Utah:											
Salt Lake City	0	------	0	1	0	2	0	1	0	5	35
Washington:											
Seattle	0	------	0	41	5	10	0	4	0	6	112
Spokane	0	------	0	48	2	1	0	0	0	0	28
Tacoma	0	------	0	4	1	1	0	0	0	0	24
Oregon:											
Portland	1	1	1	1	8	11	0	2	0	0	98
Salem	0	------	------	0	------	1	0	------	0	0	------
California:											
Los Angeles	8	19	1	123	25	58	0	16	1	14	402
Sacramento	1	------	0	28	1	5	4	2	0	0	30
San Francisco	4	1	1	757	8	22	0	5	0	4	197

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Arkansas:			
Boston	1	1	0	Little Rock	0	0	1
New York:				Louisiana:			
New York	2	3	1	New Orleans	1	0	0
Ohio:				Shreveport	0	2	0
Cleveland	1	0	0	Texas:			
Kentucky:				Houston	1	0	0
Louisville	1	0	0	California:			
Tennessee:				Los Angeles	1	0	0
Knoxville	1	0	0				
Alabama:							
Birmingham	1	0	0				

Encephalitis, epidemic or lethargic.—Cases: Springfield, Mass., 1; New York, 3; Cleveland, 1.
Pellagra.—Cases: Winston-Salem, 1; Atlanta, 2; Brunswick, 1; Savannah, 7; Los Angeles, 1.
Typhus fever.—Cases: Winston-Salem, 1; Atlanta, 1.

FOREIGN AND INSULAR

CHILE

Vital statistics—Year 1937.—Following are vital statistics for Chile for the year 1937, as published by the Chilean Bureau of Statistics:

	Number	Rate per 100,000 population		Number	Rate per 100,000 population
Marriages	38,082		Deaths from—Continued.		
Live births	153,354		Diarrhea and enteritis (under 2 years)	7,942	173.8
Total deaths	109,795		Influenza	4,346	95.1
Deaths under 1 year of age	36,914	[1] 240.71	Meningitis, simple	5,484	129.0
Deaths from—			Pneumonia, unspecified	7,202	157.6
Accidents	424		Senility	2,677	58.6
Bronchopneumonia	12,829	280.6	Tuberculosis, respiratory system	10,699	234.0
Cancer of the esophagus	2,143	46.9			
Cerebral hemorrhage	2,045	44.8			
Congenital weakness and distrophias	7,459	163.1			

[1] Per 1,000 live births.

NOTE.—The estimated population in 1937 was 4,597,254.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for February 24, 1939, pages 322-333. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

India (French)—Chandernagor.—During the week ended January 21, 1939, 2 cases of cholera were reported in Chandernagor, French India.

Plague

Ecuador—Riobamba.—Under date of February 16, 1939, an outbreak of pneumonic plague was reported in Riobamba, Ecuador, with 15 deaths. The disease was reported to be localized in a hospital and to have a very high fatality rate.

Hawaii Territory—Island of Hawaii—Hamakua District.—Rats proved positive for plague have been found in Hamakua District, Island of Hawaii, Hawaii Territory, as follows: Kukaiau—January 17, 1 rat, January 18, 1 rat, January 19, 1 rat; Paauhau—January 18, 1 rat, January 19, 2 rats.

Smallpox

Japan—Kobe.—Under date of February 10, 1939, a nonepidemic outbreak of smallpox was reported in Kobe, Japan, with 22 cases and 4 suspected cases reported since January 3, 1939. Compulsory vaccination was being planned for one month.

Yellow Fever

Ivory Coast—Angeles Plantation.—On February 5, 1939, 1 fatal case of yellow fever was reported in Angeles Plantation, Ivory Coast.